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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10 035,551	12 27 2001	Chung-Chih Wang		3323

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EXAMINER

KNAUSS, SCOTT A

ART UNIT PAPER NUMBER

2874

DATE MAILED: 03 07 2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/035,551

Applicant(s)

WANG ET AL.

Examiner

Scott A Knauss

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☒ Claim(s) 6, 7, 16 and 17 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claims 6,7,16 and 17 are objected to because of the following informalities: The claims contain the limitations "generally semicircular" and "generally coiled" which are objected to, because it is not clear what exactly "generally" comprises.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1,2,4,6,8,12,14,16,18 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by US 4,979,793 (Bowen et al).

Regarding claim 1 Bowen discloses an optical attenuator in figs. 2 and 3 with all the limitations set forth in the claim, including:

An optical fiber #11 comprising an attenuating part which is bent by a plunger #44 to obtain a desired attenuation.

A fixture (covers #13,#14) to which the fiber is fixed.

Regarding claims 2 and 12 Bowen discloses an optical attenuator in figs. 2 and 3 with all the limitations set forth in the claim, including:

An optical fiber #11 comprising an attenuating part which is bent by a plunger #44 to obtain a desired attenuation.

A fixture (covers #13,#14) to which the fiber is fixed.

Two optical connectors #21 and #22 respectively aligned with opposite ends of the optical fiber.

Regarding claims 4 and 14, as shown in fig. 2, the connectors are engaged in the fixture formed by covers #13 and #14.

Regarding claims 6 and 16, it is apparent from fig. 2 that the attenuating part of the optical fiber is configured to be generally semicircular.

Regarding claims 8 and 18, Bowen discloses in fig. 2 holders (ferrules) #24,#23 which are engaged with respective connectors.

Regarding claim 20, Bowen discloses a method of making an attenuator in fig. 2, comprising:

Providing a pair of juxtaposed fiber connectors (#21,#22) with mating ports facing the same direction.

Connecting rear ends of the connectors with an optical fiber.

securing the fiber in position around two opposite end portions thereof

Forming a curved portion between the two end portions

Adjusting (using plunger #44) radii or turns of the curved portion to obtain a desired attenuation value.

Fixing (upon releasing plunger #44) the curved portion in position.

4. Claims 1,5,7,10 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,311,614 (Caron et al).

Regarding claim 1, Caron disclose a variable attenuator in fig. 1 comprising:

An optical fiber #25 having an attenuating part which is bent to obtain a desired attenuation.

A fixture #23 fixing the fiber thereto

Regarding claim 5, Caron discloses attaching a fiber at its attenuating part to fixture #23 using an adhesive (see column 4, lines 8-14)

Regarding claim 7, Caron discloses an attenuating part #25 which is generally coiled.

Regarding claims 10 and 11 Caron discloses in fig. 1 the use of a package comprising a frame #12 and a cover #13.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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7. Claims 1-4,8,9,12-14 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,475,781 (Chang et al) in view of US 5,259,045 (Azuma et al).

Regarding claims 1-4 and 12-14 Chang discloses in fig. 1 a loop-back connector assembly #70 which may be used as an attenuator (see column 2, lines 3-7) the connector assembly comprising:

A bent optical fiber #20

A fixture (assembly #70) fixing the optical fiber thereto

Two SC optical fiber connectors (#10) engaged in the fixture, aligned with opposite ends of the fiber

Chang discloses that such an assembly may be used as an attenuator, but does not specify how attenuation is produced, particularly whether it is provided by the bending of the fiber.

Nevertheless, it is well known in the art to use a bend region in an optical fiber to produce attenuation. Such a configuration is disclosed by Azuma in particular, wherein a fiber #1 is bent to produce a desired amount of attenuation is an optical fiber path.

Therefore it would have been obvious to one of ordinary skill in the art to use the bent region of Chang to produce attenuation, since such a configuration would produce a simple way to attenuate optical signals without the need for additional filters to produce attenuation.

Regarding claims 8 and 18, Chang discloses holders (ferrules) #16 engaged with respective connectors.

Regarding claims 9 and 19, Chang discloses an assembly having two grooves #36 retaining corresponding parts of an optical fiber.

Regarding claim 20, Chang discloses in fig. 1 a method of making a fiber connector #70, which may be used as an attenuator (see column 2, lines 3-7), comprising:

Providing a pair of juxtaposed fiber connectors #10 with mating ports facing to a same direction

Connecting rear ends of the pair of connectors with an optical fiber.

Securing the fiber in position around two opposite end portions thereof

Forming a curved portion between the two end portions

Securing the curved portion in position.

Chang discloses that such an assembly may be used as an attenuator, but does not specify how attenuation is produced, particularly whether it is provided by adjusting the radii or turns of a fiber.

Nevertheless, it is well known in the art to use a bend region in an optical fiber to produce attenuation. Such a configuration is disclosed by Azuma in particular, wherein the radius of a curved fiber #1 is adjusted to produce a desired amount of attenuation in an optical fiber path.

Therefore it would have been obvious to one of ordinary skill in the art to use the bent region of Chang to produce attenuation, by adjusting the radii of the curved region to produce a desired attenuation value, since such a configuration would produce a

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simple way to attenuate optical signals without the need for additional filters to produce attenuation.

8. Claims 12, 15 and 17 rejected under 35 U.S.C. 103(a) as being unpatentable over Caron in view of Chang.

Caron, as described above regarding claims 1 and 7, discloses a variable attenuator with all the limitations of claims 12 and 17 except for the use of optical connectors on the ends of the fibers, instead disclosing strain relief members #28 and #29.

Nevertheless, it is well known in the art in such attenuation devices to place connectors on the ends of the fibers. Chang, described above, discloses one such attenuation device in which SC connectors are placed on the ends of a looped optical fiber. Such a configuration is advantageous to promote easy connection of the attenuator to other optical devices.

Therefore it would have been obvious to one of ordinary skill in the art to replace strain relief assemblies #28, #29 of Caron with optical connectors for the purpose of connecting the variable attenuator to other optical devices.

Regarding claim 15, Caron discloses attaching a fiber at its attenuating part to fixture #23 using an adhesive (see column 4, lines 8-14)

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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US 6,454,464 (Nolan) discloses in figs. 13-20 another example of an attenuation device using coiled fiber.

US 5,677,977 (Smith) discloses another type of attenuator utilizing a controlled bend of an optical fiber

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott A Knauss whose telephone number is (703) 305-5043. The examiner can normally be reached on 9-6 Monday-Friday.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (703) 308 - 4819. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0530.

Scott Knauss

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sak
February 11, 2003


HEMANG SANGHAVI
PRIMARY EXAMINER